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THE RECENT SPORTING EXPERIENCES OF MR. SELOUS.

Sport and Travel, East and West. By F. C. Selous. Pp. ix. + 311; illustrated. (London: Longmans, Green, and Co., 1900.)

HAVING seen, or shot, practically every species of great game in South and South-east Africa, the indefatigable author of the volume before us has devoted several seasons in the closing decade of the century to hunting-trips in the northern hemisphere. These expeditions included three trips to Asia Minor in search of the wild goat, the Armenian sheep, and the Asiatic red deer, and two to the Rocky Mountains, where wapiti, mule-deer, white-tailed deer, prongbuck and lynx fell to the practised aim of the veteran hunter. Not that Mr. Selous is by any means merely a hunter; he is likewise an observant field-naturalist and an enthusiastic egg-collector, having contributed many years ago an important paper on African antelopes to the *Proceedings* of the Zoological Society, while his recent expeditions to Asia Minor have furnished material for an ornithological paper to the *Ibis*. It is perhaps needless to add that such an experienced hunter may be depended upon not to shoot animals for the mere sake of slaying, and that after obtaining a few fine examples of the species he encountered for the first time to add to his splendid collection at Alpine Lodge, Worplesdon, and occasionally killing an individual or two for the commissariat, Mr. Selous has always been content to stay his hand.

To compare in point of interest his recent experiences with those detailed in his "Hunter's Wanderings in Africa" would perhaps be unjust, if only for the reason that the number of species of game animals to be encountered in the lands he has lately visited falls immeasurably short of those which have their home on the South African veldt. Then, too, we have no such mighty beasts as the white rhinoceros and the African elephant to enthrall the reader's interest in the volume. And it must also be remembered that hunting in the "Rockies" has been made familiar to us by the writings of sportsmen like Roosevelt, whereas at the date Mr. Selous gave to the world his unrivalled South African experiences, there had been comparatively little written on the subject of the large game of the interior since the trips of Gordon Cumming, Andersson and Oswell.

Nevertheless, in spite of having the prestige of his earlier *magnum opus* to contend against, it cannot be gainsaid that on the present occasion Mr. Selous has succeeded in producing a volume calculated to attract a large circle of readers, and these, too, not only from among sportsmen and travellers, but from naturalists as well. To the latter, at any rate, the greatest interest of the book is concentrated on the part devoted to shooting in Asia Minor, in which district we have a less full knowledge of the animals than is the case with those of North America. One of the points where the author has been of undoubted service to naturalists is in regard to his description of the seasonal colour-changes of the wild goat; such seasonal changes in the colour of

horned game animals having till late years attracted comparatively little attention among zoologists. According to the description given by Mr. Selous, it appears that in the summer coat these goats are of a reddish-brown colour, with the broad dark shoulder-stripe, which becomes so conspicuous in winter, almost entirely wanting, the black beard being at the same time comparatively short. In winter, on the other hand, the old bucks have the general ground-colour nearly white, although the flanks and under-parts are somewhat darker, being of a light sandy-yellow. In marked contrast to these pale tints stands out the broad black shoulder-stripe and dorsal streak, while the beard becomes long and flowing.

It is interesting to note that, in spite of his full acquaintance with all the splendid South African representatives of the antelope tribe, Mr. Selous pronounces the wild goat of the Maimun Dagħ to be one of the handsomest and most striking of all game animals, although he is careful to avoid making invidious comparisons. In its native mountains the wild goat is, indeed, one of the most wary of horned animals, and as it is by no means plentiful, its pursuit demands all the patience and resources of the skilled stalker. And the sympathies of all sportsmen will be with Mr. Selous when they read his account how, after many failures and losing one good head, he eventually killed a magnificent old buck, only to discover that it was minus one of its splendid horns. The statement, on p. 27, that the wild goats of the Musa Dagħ (on which there is but a single spring of fresh water) frequently descend to the beach and drink sea-water, is certainly very remarkable, for although it is now well known that many species of ruminants can exist for long periods, if not altogether, without drinking, yet this is the first instance that has come under our notice of their resorting to the ocean for water. Although, in the absence of an index, it is a little difficult to be certain that we have not overlooked a passage, the author does not seem to have been successful in "bagging" the Armenian wild sheep, although he obtained several fine examples of the ollin, or Asiatic race of the red deer.

To visit the mountains and prairies of the north-western states of America appears to have been a life-long dream of Mr. Selous—a dream that was never realised till long after the bison had disappeared from the latter, and the numbers of the wapiti had been deplorably reduced in the former. In regard to the skulls of the bison which the author met with so commonly in the Bighorn basin, we are told that many of these still retained the sheaths of the horns and even fragments of skin and hair after an exposure of at least fourteen years. "I should certainly never have believed," he writes, "that even the hardest of bone, let alone horn and skin, could have withstood the ravages of time and exposure so well. In the climate of Africa no organic matter lasts very long when exposed to the weather, and even the skull and leg-bones of an elephant would, I think, crumble to dust and absolutely disappear in less than fifteen years from the date of the animal's death." At the present time, these observations are of considerable interest in connection with the skin of the ground-sloth preserved in a Patagonian cave.

Evidence of the former abundance of the wapiti and

the mule-deer in the same district was afforded by the number of bleached antlers which marked the line of the great spring migration, when the wapiti were returning to the mountains from their winter feeding-grounds on the plains. At the present day, these noble deer are unknown on the low-grounds of the Bighorn basin, and the few survivors have to make shift as best they can during the dreary winter months in the mountains, from among the pine forests of which they emerge as seldom as possible.

Mr. Selous was fortunate enough to obtain some very fine heads of wapiti, white-tailed deer and mule-deer, one head of the latter being a remarkably good specimen, and notable on account of the relatively narrow span of the antlers. To one expression which the author is very fond of using—to wit, a “bull” wapiti—we are fain to take exception, the term “stag” being the proper one to employ in this connection. And here we may venture to point out to the author, in connection with a statement on page 166, that naturalists of the present day (whatever may have been the practice with their predecessors) are not in the habit of translating generic terms into English, and that, consequently, there is no objection to the application of the name *Antilocapra* to the American prongbuck, on the ground that it indicates an animal midway between an antelope and a goat. Such names should be regarded as mere abstract terms without any definite meaning. And, while we are fault-finding, it may be mentioned that there are a few little slips in nomenclature which might advantageously have been avoided. The rough-legged buzzard, for instance, is not an *Aquila* (p. 140), while *Speotyto*, and not *Speotitis* (p. 145), is the proper title for the little American ground-owls. It may be added that it would have been a decided improvement to the book if, instead of making the title the heading of every page, the chapter-headings had been employed for the right-hand pages.

A reviewer is always expected to pick some holes in a book, but it may be candidly stated that the foregoing are all the faults we have to find with the one before us. To those who contemplate a trip to either of the districts visited by Mr. Selous, as well as to those stay-at-home people who prefer to hear of stirring adventures by field and flood when comfortably seated by their own firesides, rather than undergo the inseparable hardships and toils themselves, we can confidently recommend “*Sport and Travel*” as an attractive and interesting volume, written by one who is at the same time a keen sportsman and an intelligent and thoughtful observer.

R. L.

THE COMPARATIVE HISTOLOGY OF VERTEBRATES.

Lehrbuch der vergleichenden mikroskopischen Anatomie der Wirbeltiere. Herausgegeben von Dr. Med. Albert Oppel—Dritter Teil. Pp. x. + 1180. (Jena: Gustav Fischer, 1900.)

PROF. OPPEL has set himself the colossal task of furnishing a succinct account of the comparative histology of vertebrates, and the volume before us is the third instalment towards the attainment of that end. The two former parts, which appeared in 1896 and 1897, dealt respectively with the comparative structure of the stomach and of the gullet and intestines. The present is concerned

with the remainder of the alimentary canal, viz., the mouth, including the tongue and salivary glands (but exclusive of the teeth, which are referred to a later publication in which the skeleton will be dealt with) and the large glands whose ducts open into the commencement of the intestine, viz., the pancreas and liver. The extent of the undertaking will be manifest when we mention that the account of these subjects requires nearly 1200 large octavo pages, with 679 illustrations in the text and ten coloured lithographic plates, and that there is a bibliographical list comprising several hundred books and papers, each one of which is referred to in the text, and all of which are given with their full title and references; so that the possession of this alone would render the book of inestimable value to any one working at any part of the subject with which it deals.

As we have pointed out in noticing the parts of Prof. Oppel's work which have already appeared, the author has not attempted to verify all the statements and descriptions which he gives; such verification would indeed be an impossible task when we consider the enormous amount of material which has accumulated upon the subject, even within recent years. Nevertheless, there are several points in the present volume upon which Prof. Oppel has made personal observations, and although these are not published in this book for the first time, their appearance tends to give an air of originality to a work which, in the main, must necessarily be a compilation, however critically the matter which it contains is dealt with; but it will be easily understood that where, as in a work of this character, conciseness must be a main object there cannot be much room for criticism.

A feature of the work is the chronological order in which the results of investigation upon each subject dealt with are put before the reader, an arrangement which gives a special interest of a historical character to many of the descriptions. This is well exemplified in the chapters dealing with the relation between the structure of glands and their condition of activity, in which, as in many other parts of the book, the author contrives to introduce points of high physiological interest into a work the chief aim of which is no doubt morphological. Where all is excellent it is not easy to particularise; but certain parts are especially dealt with in a masterly manner, as, for example, the structure and relations of the tonsils and similar lymphatic tissues in the mouth and pharynx, the papillæ of the tongue and the distribution of taste buds upon them, the structure of the lingual and salivary glands and pancreas in mammals, including the changes which they undergo during secretion, their secretory capillaries, their nerves and nerve-endings. The account of the pancreas embraces, not only a minute description of the glandular substance proper and of the changes which its cells undergo in different physiological conditions, but also a careful description of the intertubular islands which were first described by Langerhans, and which have recently attracted attention on account of the possibility, which has been expressed by more than one writer, that the influence which that gland exerts upon the carbohydrate metabolism of the body (its entire removal is always followed by severe diabetes) may be dependent upon an internal secretion produced by the cells in question.

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